

Saint Adelaide Catholic Church (MUP04-056)

San Diego County (Campo Valley)

September 13, 2006

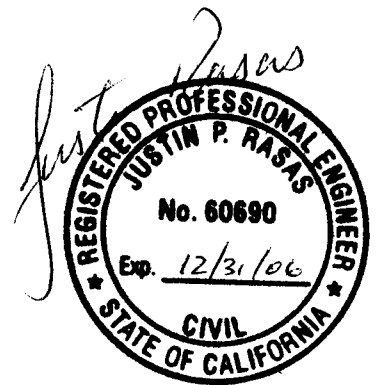
Traffic Impact Analysis

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Job #511

SEAL ON 9/13/06

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1.0 Introduction

The purpose of this study is to determine and analyze traffic impacts for the proposed Saint Adelaide Catholic Church. The project is to be located on the northeast corner of Custer Road and Sheridan Road in the Campo Valley area of San Diego County, California. The site is currently vacant. The applicant has indicated that no existing or approved use permits exist. The proposed use permit will be for a Church. The location of the project is shown in **Figure 1** with a vicinity map shown in **Figure 2**. A proposed site plan is included in **Figure 3**.

This report describes the existing roadway network in the vicinity of the project site and includes a review of the existing and proposed activities for weekday peak AM and PM periods, and daily traffic conditions when the project is completed. The format of this study includes the following chapters:

1.0	Introduction
2.0	Study Methodology
3.0	Existing Conditions
4.0	Project Description
5.0	Existing + Project Conditions
6.0	Cumulative Projects
7.0	Existing + Project + Cumulative Conditions
8.0	Year 2020 without and with Project Conditions
9.0	Conclusion



Figure 1: Project Location

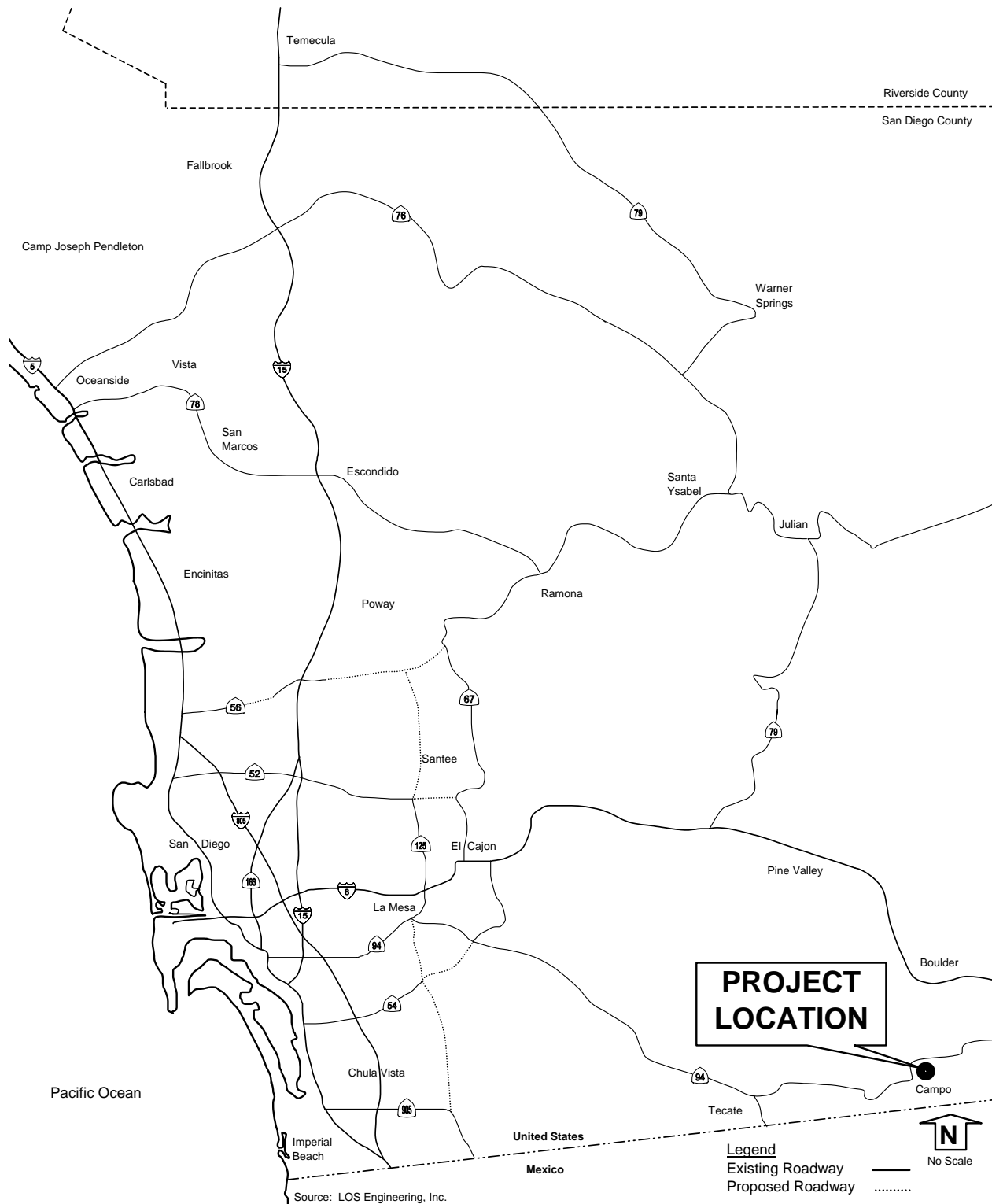
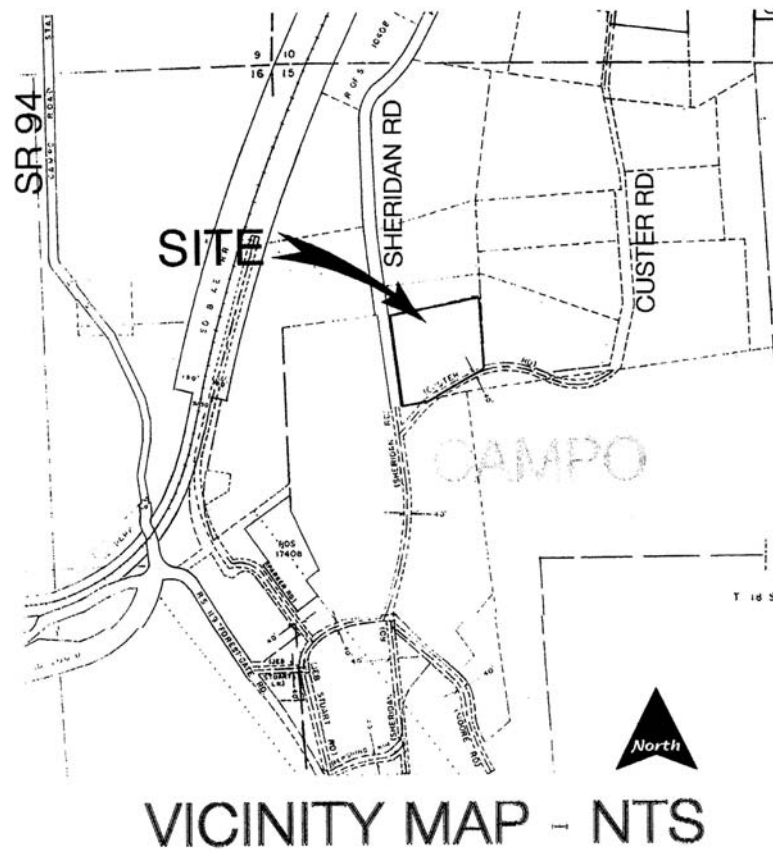


Figure 2: Vicinity Map



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2.0 Study Methodology

The parameters by which this traffic study was prepared included the determination of what intersections and roadways are to be analyzed, the scenarios to be analyzed and the methods required for analysis. The criteria for each of these parameters are included herein.

2.1 Study Area Criteria

The project study area is generally determined by the limits or extent of where 50 peak hour project trips would travel to or from the site, which is based on Congestion Management Program (CMP) guidelines. The following intersections were analyzed as part of this study:

- 1) SR-94/Forest Gate Road (un-signalized)
- 2) SR-94/Sheridan Road (un-signalized)

Additionally, the following street/highway segments were analyzed as part of this study:

- 1) SR-94 from Tecate Road to Forest Gate Road
- 2) SR-94 from Forest Gate Road to Buckman Springs Road
- 3) SR-94 from Buckman Springs Road to Sheridan Road
- 4) SR-94 east of Sheridan Road
- 5) Buckman Springs Road north of SR-94
- 6) Sheridan Road from SR-94 to Jeb Stuart Road

2.2 Scenario Criteria

The number of scenarios to be analyzed is typically based on the size of the project, the number of cumulative projects and whether the project conforms to current zoning. For this project, the following scenarios were included:

- 1) Existing Conditions
- 2) Existing + Project Conditions
- 3) Existing + Project + Cumulative Conditions
- 4) Year 2020 Conditions
- 5) Year 2020 + Project Conditions

2.3 Traffic Analysis Criteria

The traffic analyses prepared for this study were based on the *2000 Highway Capacity Manual* (HCM) operations analysis using Level of Service (LOS) evaluation criteria. The operating conditions of the study intersections, street segments, and highway segments are measured using the HCM LOS designations, which ranges from A through F. LOS A represents the best operating condition and LOS F denotes the worst operating condition. For this traffic study, the intersections

under Caltrans jurisdiction were analyzed using both County and Caltrans criteria while the roadway segments under Caltrans jurisdiction were analyzed using only Caltrans criteria. The individual LOS criteria for each roadway component are described below.

2.3.1 Intersections

The study intersections were analyzed based on the **operational analysis** outlined in the 2000 HCM. This process defines LOS in terms of **average control delay** per vehicle, which is measured in seconds. LOS at the intersections were calculated using the computer software program Synchro 6.0 (Trafficware Corporation, 2003). The HCM LOS for the range of delay by seconds for un-signalized and signalized intersections is described in **Table 1**.

TABLE 1: UN-SIGNALIZED AND SIGNALIZED INTERSECTION LEVEL OF SERVICE (HCM 2000)

Level of Service	Un-Signalized Average Control Delay (seconds/vehicle)	Signalized Average Control Delay (seconds/vehicle)
A	0-10	0-10
B	> 10-15	> 10-20
C	> 15-25	> 20-35
D	> 25-35	> 35-55
E	>35-50	> 55-80
F	> 50	> 80

Source: Highway Capacity Manual 2000.

The accepted methodology by Caltrans for un-signalized intersections is the most current edition of the HCM as noted on page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies*, January 2001.

2.3.2 Street Segments

The street segments were analyzed based on the functional classification of the roadway using the County of San Diego *Average Daily Vehicle Trips* capacity lookup table. The roadway segment capacity and LOS standards used to analyze street segments are summarized in **Table 2**.

TABLE 2: STREET SEGMENT DAILY CAPACITY AND LOS (COUNTY OF SAN DIEGO)

Circulation Element Road Classification	CROSS SECTION	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	126/146	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial	102/122	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	78/98	<14,800	<24,700	<29,600	<33,400	<37,000
Collector	64/84	<13,700	<22,800	<27,400	<30,800	<34,200
Town Collector	54/74	<3,000	<6,000	<9,500	<13,500	<19,000
Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Collector	40/84	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
<u>Non-Circulation Roads</u>						
Residential Collector	40/60	NA	NA	<4,500	NA	NA
Residential Road	36/56	NA	NA	<1,500	NA	NA

Source: County of San Diego Department of Public Works *Public Road Standards* July 14, 1999.



2.3.3 Two-Lane Highway Segments

The highway segments were analyzed based on the LOS criteria for two-lane highways outlined in the 2000 HCM. This process defines LOS in terms of **percent time spent following**. The accepted methodology by Caltrans is the most current edition of the HCM as noted on page 5 of Caltrans' *Guide for the Preparation of Traffic Impact Studies*, January 2001. The two-lane highway LOS was calculated using the HCM 2000 software. The LOS is summarized below in **Table 3**.

TABLE 3: TWO-LANE HIGHWAY LEVEL OF SERVICE (HCM 2000)

Criteria	LOS A	LOS B	LOS C	LOS D	LOS E
Percent Time Spent Following	≤35	>35-50	>50-65	>65-80	>80

Source: HCM 2000 Exhibit 20-2.

2.4 Significance Criteria

Based on the County of San Diego *Guidelines for Determining Significance*, a project may have a direct and or cumulative impact if the significance criteria is exceeded as shown in **Table 4**.

TABLE 4: COUNTY OF SAN DIEGO SIGNIFICANT TRAFFIC IMPACT THRESHOLDS

Measures of Significant Project Impacts to Congestion Allowable Increases on Congested Roads and Intersections					
Operations	Road Segments			Intersections	
	2-Lane Road	4-Lane Road	6-Lane Road	Signalized	Un-signalized
LOS E	200 ADT	400 ADT	600 ADT	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	100 ADT	200 ADT	300 ADT	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego *Guidelines for Determining Significance* Table 1 from page 9. Note: A critical movement is one that is experiencing excessive queues. By adding proposed project trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

A direct impact would occur when the significance criteria is exceeded. If the proposed project exceeds the values provided in the above table, then the individually proposed project would result in a direct traffic impact. Specific improvements to mitigate direct impacts must be identified.

A cumulative impact would occur when two conditions are met: 1) will build-out of all near term projects result in a cumulative traffic impact and 2) does the amount of traffic generated by the individual proposed project contribute (even in a small part) to that cumulative impact. Both conditions must be met for an individual project to result in a cumulative traffic impact. If the traffic generated from all the near term projects (cumulative projects) would result in a cumulative traffic impact then condition one is met. If the total amount of traffic generated exceeds the values provided in the above table, then condition 2 is met and the individually proposed project would result in a cumulative traffic impact. Fairshare contributions toward cumulative impacts may only be provided when a specific project and schedule for completion of the project has been identified.



Potential mitigation measures can include traffic signal improvements, physical road improvements, street re-striping and parking prohibitions, fair share contributions, and transportation demand management programs.

2.5 Study Limitations

The findings and recommendations of this report were prepared in accordance with generally accepted professional traffic and transportation engineering principles and practice for the County of San Diego at this time. No other warranty, express or implied is made.



3.0 Existing Conditions

This section describes the study area street system, peak hour intersection volumes, daily roadway volumes, and existing LOS.

3.1 Existing Street System

In the vicinity of the project, only the roadways where project traffic is anticipated to travel were analyzed as part of this study, which included:

SR-94 from Tecate Road to White Star (junction Old Route 8) is classified as a *Major Road with bike lanes* on the San Diego County Circulation Element map (A copy of the County Circulation Element map for the study area is included in **Appendix A**). This two-lane undivided roadway is generally constructed within approximately 26 feet of pavement with one twelve (12) foot travel lane and a paved shoulder of approximately one (1) foot in each direction. A dirt shoulder is available with widths from three to eight feet. The posted speed limit is 55 Miles Per Hour (MPH). An 85th percentile speed of 50.6 MPH was recorded in the eastbound direction and 47.4 MPH in the westbound direction at a location of 1.2 miles east of La Posta Road.

Buckman Springs Road from I-8 to SR-94 is classified as a *Collector with bike lanes* on the San Diego County Circulation Element map. This two-lane undivided roadway is generally constructed within approximately 26 feet of pavement with one twelve (12) foot travel lane and a paved shoulder of approximately one (1) foot in each direction. A dirt shoulder is available with widths from three to eight feet. The posted speed limit is 55 MPH. An 85th percentile speed of 64.0 MPH was recorded in the northbound direction and 66.2 MPH in the southbound direction at a location approximately midway between I-8 and SR-94.

Sheridan Road from SR-94 to Jeb Stuart Road is not classified on the San Diego County Circulation Element map. This two-lane un-divided roadway is constructed with approximately 29 feet of pavement. A majority of Sheridan Road is been recently paved with a curb to curb with of 29 feet. This segment has one travel lane in each direction. No shoulder is provided. A posted speed limit was not observed. An 85th percentile speed of 41.8 MPH was recorded in the northbound direction and 39.6 MPH in the southbound direction along the project frontage.

Forest Gate Road from SR-94 to Jeb Stuart Lane is not classified on the San Diego County Circulation Element map. This two-lane un-divided roadway is generally constructed within approximately 30 feet of pavement with one twelve (12) foot travel lane and a paved shoulder of approximately three (3) feet in each direction. A posted speed limit was not observed. A travel speed of 25 MPH was observed while driving this segment during a PM peak hour period.

Jeb Stuart Lane from Forest Gate Road to Jeb Stuart Road is not classified on the San Diego County Circulation Element map. This two-lane un-divided roadway is constructed with approximately 28 feet of pavement. This segment has one travel lane in each direction. A posted speed limit was not



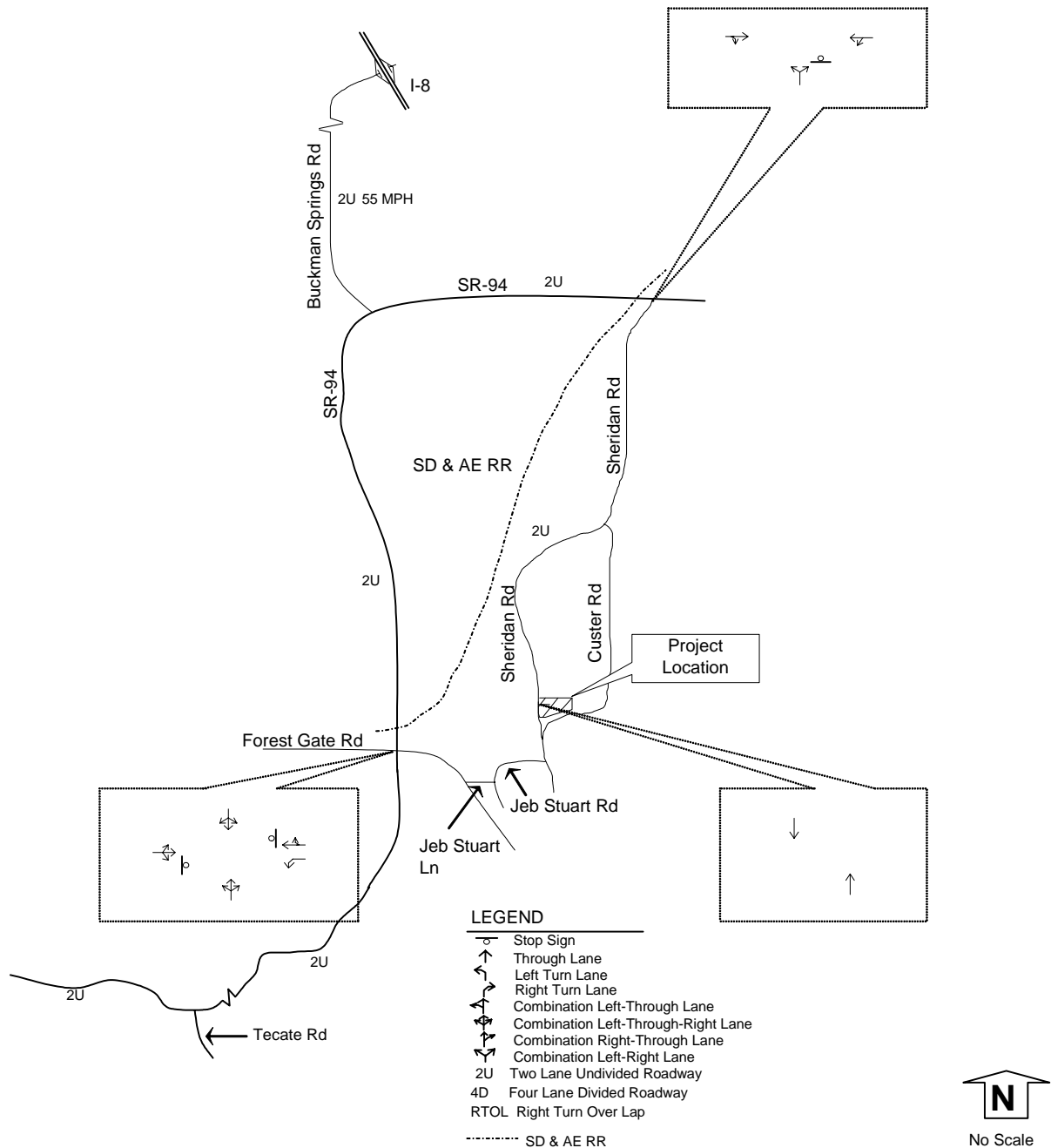
observed. A travel speed of 25 MPH was observed while driving this segment during a PM peak hour period.

Jeb Stuart Road from Jeb Stuart Lane to Sheridan Road is not classified on the San Diego County Circulation Element map. This two-lane un-divided roadway is constructed with approximately 29 feet of pavement. This segment has one travel lane in each direction. A posted speed limit was not observed. A travel speed of 25 MPH was observed while driving this segment during a PM peak hour period.

The existing roadway conditions are shown in **Figure 4**.



Figure 4: Existing Roadway Conditions



3.2 Existing Traffic Volumes and LOS Analyses

Existing AM and PM peak hour intersection volumes (with count dates) for the following intersections were collected for this study:

- 1) SR-94/Forest Gate Road (3/10/2005)
- 2) SR-94/Sheridan Road (3/10/2005)

The following street/highway segment volumes (with count dates) were obtained for this study:

- 1) SR-94 from Tecate Rd to Forest Gate Road (2004)
- 2) SR-94 from Forest Gate Road to Buckman Springs Road (2004)
- 3) SR-94 from Buckman Springs Road to Sheridan Road (2004)
- 4) SR-94 east of Sheridan Road (2004)
- 5) Buckman Springs Road north of SR-94 (2005)
- 6) Sheridan Road from SR-94 to Jeb Stuart Road (2005)

The existing AM, PM, and ADT volumes are shown on **Figure 5**, with count data included in **Appendix B**. The LOS calculated for the intersections and street segments, and highway segments under existing conditions are shown in **Tables 5, 6, and 7**, respectively.

TABLE 5: EXISTING INTERSECTION LEVEL OF SERVICE

Intersection and Control ¹	Movement	Peak Hour	Existing	
			Delay ²	LOS ³
1) SR-94 at Forest Gate Rd (U)	EB	AM	9.7	A
	WB	AM	8.9	A
	NB	AM	0.3	A
	SB	AM	4.3	A
	EB	PM	10.2	B
	WB	PM	9.3	A
	NB	PM	0.7	A
	SB	PM	3.3	A
2) SR-94 at Sheridan Rd (U)	EB	AM	0.0	A
	WB	AM	2.1	A
	NB	AM	9.1	A
	EB	PM	0.0	A
	WB	PM	1.3	A
	NB	PM	9.2	A
3) Sheridan Road at Project Driveway (U)	WB LR	AM	DNE	DNE
	SB LT	AM	DNE	DNE
	WB LR	PM	DNE	DNE
	SB LT	PM	DNE	DNE

Notes: 1) Intersection Control - S: Signalized; U: Unsignalized. 2) Delay is HCM delay measured in seconds.

3) LOS: Level of Service/ILV Capacity. 4) Delta is the increase in delay from project. 5) Impact due to project (yes or no).

Movement: WB LR - Westbound combination left right turn lane; DNE - Does not exist.

Figure 5: Existing Volumes

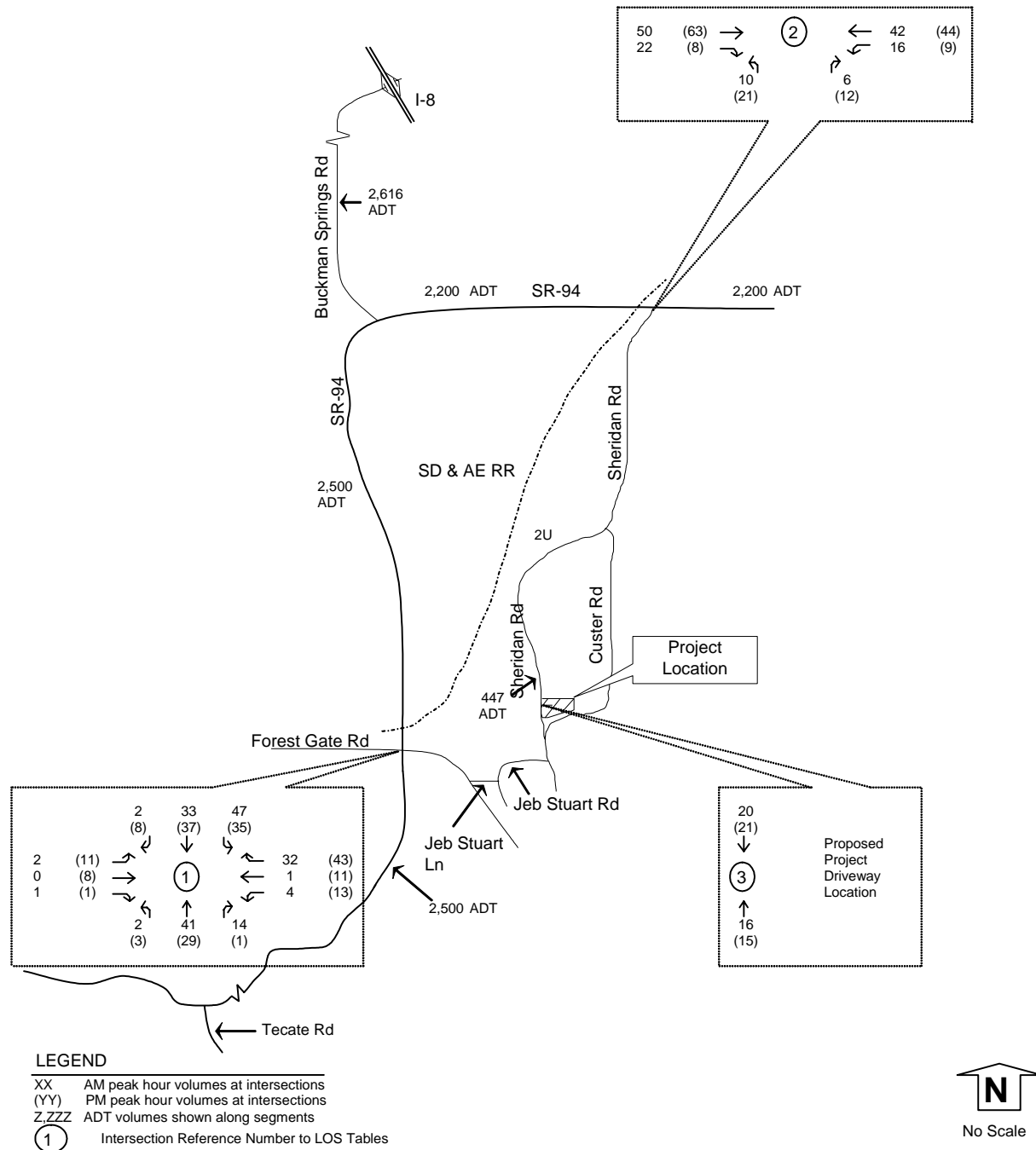


TABLE 6: EXISTING SEGMENT ADT VOLUMES AND LEVEL OF SERVICE (COUNTY CRITERIA)

Street Segment	SR-94	SR-94	SR-94	SR-94	Buckman Spr	Sheridan Rd
From	Tecate Rd	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	I-8	SR-94
To	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	White Star	SR-94	Jeb Stuart Rd
Roadway Classification	Major	Major	Major	Major	Collector	Non-Collector
Bike Lanes Classification	Yes	Yes	Yes	Yes	Yes	No
# of Lanes Currently Built	2	2	2	2	2	2
LOS E Capacity	16,200	16,200	16,200	16,200	16,200	4,500
ADT	2,500	2,500	2,200	2,200	2,616	447
Volume to Capacity	0.15	0.15	0.14	0.14	0.16	0.10
Level of Service	B	B	B	B	B	C

Source: LOS Engineering, Inc.

TABLE 7: EXISTING TWO-LANE HIGHWAY LEVEL OF SERVICE (CALTRANS CRITERIA)

Street Segment	SR-94		SR-94		SR-94		SR-94	
From	Tecate Rd		Forest Gate Rd		Buckman Springs Rd		Sheridan Rd	
To	Forest Gate Rd		Buckman Springs Rd		Sheridan Rd		White Star	
Peak Period	AM	PM	AM	PM	AM	PM	AM	PM
<u>Existing</u>								
ADT	2,500		2,500		2,200		2,200	
Peak Hour Volume	138	171	138	171	143	133	143	133
% Time Spent Following	42.7%	46.0%	34.8%	37.3%	33.1%	32.2%	33.1%	32.2%
Volume to Capacity Ratio	0.08	0.10	0.05	0.07	0.06	0.05	0.06	0.05
Level of Service	C	C	B	B	B	B	B	B

Notes: HCM Calculations included in the Appendix.

Under existing conditions, all study intersections and roadways were calculated to operate at LOS C or better. Intersections calculations are included in **Appendix C**. The Caltrans' K and D factors used to determine the directional split in the HCM two-lane highway analysis are included in **Appendix D** with the HCM two-lane highway calculations included in **Appendix E**.



4.0 Project Description

The project will eventually consist of a Multi Purpose Hall, a Sanctuary and a School. The project is proposed in three phases: Phase 1 around year 2007 with a Multi Purpose Hall of 5,656 SF; Phase 2 around year 2012 with the addition of a Sanctuary of 4,809 SF; and Phase 3 around year 2020 with the addition of a School of 12,159 SF (maximum of 270 students) – a detailed project description (as submitted with the MUP) is included in **Appendix F**. The project site is currently vacant. The applicant has indicated that no existing or approved use permits exist. The proposed use permit will be for a Church.

4.1 Project Traffic Generation (Weekday)

A worst case scenario was assumed where all three phases could be completed under existing conditions even though the Sanctuary is not planned for completion until 2012 and the School is not planned for completion until 2020. The project traffic generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002 (for Church weekday activities), and from the Institute of Transportation Engineers (ITE) *7th Edition Trip Generation*, 2004 (for the School weekday attendance). The combined SANDAG and ITE traffic generation rates were used to calculate the total project at 764 ADT, 219 AM peak hour trips (130 inbound and 84 outbound), and 54 PM peak hour trips (23 inbound and 31 outbound). The ITE traffic generation calculations are included in **Appendix G**. The traffic generation for both scenarios is shown in **Table 8**.

TABLE 8: WEEKDAY PROJECT TRAFFIC GENERATION

TABLE 8: WEEKDAY PROJECT TRAFFIC GENERATION														
Proposed Land Use	Rate	Size & Units	ADT	%	Split	AM			PM					
						IN	OUT	%	Split	IN	OUT			
Worst Case with all 3 Phases being completed in the near-term														
Church (weekday)	9 /KSF	10,465 SF	94	5%	0.6 0.4	3	2	8%	0.5 0.5	4	4			
Private School (weekday)	See Note 1	270 Students	670		See Note 1	130	84		See Note 1	19	27			
Total			764			133	86			23	31			

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002 and ITE 7th Edition

Trip Generation. SF - Square Feet; ADT-Average Daily Traffic; Split-percent inbound and outbound. Note 1: ITE 7th Edition was used to calculate the trip generation - calculations and rates are included in Appendix.

4.2 Project Traffic Generation (Sunday)

A Sunday traffic generation was calculated using the maximum number of seats available and the existing vehicle occupancy as documented by Church records from patrons currently attending the interim St. Adelaide Church in Campo (occupancy data included in the project description within Appendix F). Phase 1 is proposed to have Mass in the 5,656 SF Multi-Use Room with a seating capacity for 250. Based on a vehicle occupancy of 2.9, the total inbound vehicles is calculated at 86. The total Mass inbound and outbound volume is calculated at 172 vehicles (86 x 2). Only one Mass per day (Saturday & Sunday) is proposed during Phase 1; therefore, the daily estimate is 172 vehicles. Phase 2 and 3 are proposed to have Mass in the 4,809 SF Sanctuary with a seating capacity for 300. Based on a vehicle occupancy of 2.9, the total inbound vehicles is calculated at

103. The total Mass inbound and outbound volume is calculated at 206 vehicles (103 x 2). One Mass is proposed for Saturday and two Masses are proposed for Sunday; therefore, the Sunday daily estimate is 412 vehicles (206 x 2). Please note that the Sunday traffic generation estimates as summarized below in **Table 9** are conservative because:

- 1) These calculated rates are based on a maximum seating capacity, which is typically not achieved during normal services, and
- 2) The SANDAG weekend rate of 36 ADT/KSF for a Sanctuary of 4,809 SF would equal an ADT of 173, which is significantly less than the estimate of 412 ADT for a Sunday with two services.

TABLE 9: SUNDAY PROJECT TRAFFIC GENERATION

Proposed Land Use	Patrons per Mass	Vehicle Occupancy	Vehicles per Mass (In only)	Mass Pk Hr (Total In&Out)	# of Masses per day	Daily Volume Estimate
Phase 1						
Church (Sunday)	250	2.9	86	172	1	172
Phase 2 or 3						
Church (Sunday)	300	2.9	103	206	2	412

Source: Patrons per mass based on maximum seating capacity. Vehicle occupancy from Church data. Daily and peak hour volume estimates may be conservative because they are based on the maximum seating capacity which is typically not achieved during normal attendance.

4.3 Worst Cast Project Traffic Generation between Weekday and Sunday

The weekday traffic generation is calculated at 764 ADT with 219 AM peak hour trips and 54 PM peak hour trips. The Sunday traffic generation is calculated at 412 ADT with 206 AM peak hour trips with minimal PM peak hour trips. Because the Sunday traffic generation is less than the weekday traffic generation, a Sunday analysis was not prepared.

4.4 Project Distribution and Assignment

Project trips were distributed to the adjacent roadway network based on information provided by the applicant on the anticipated areas that would serve the Church and School (included in Appendix F), and the area of influence based on locations of other Catholic Churches (**Figure 6**). The distribution is shown in **Figure 7**. The assignment of project volumes is shown in **Figure 8**.



Figure 6: Project Distribution Area of Influence

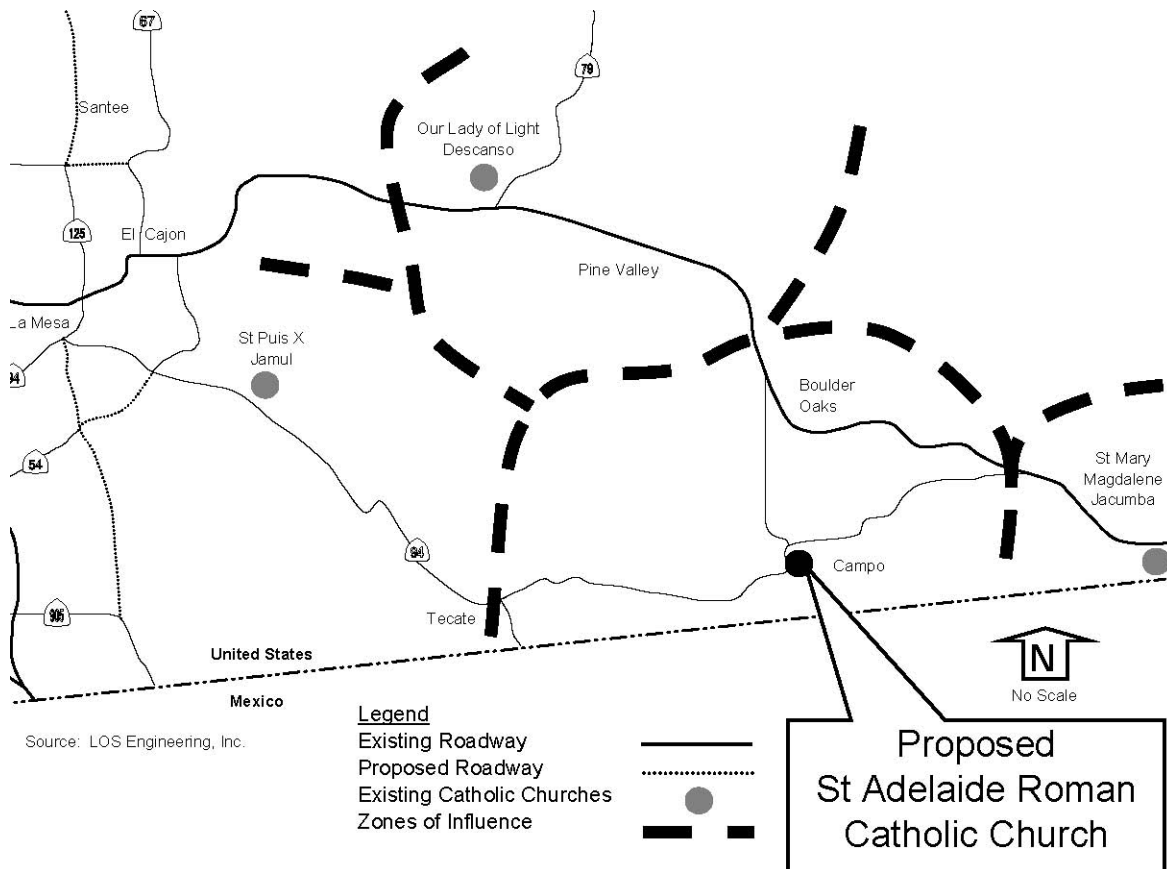
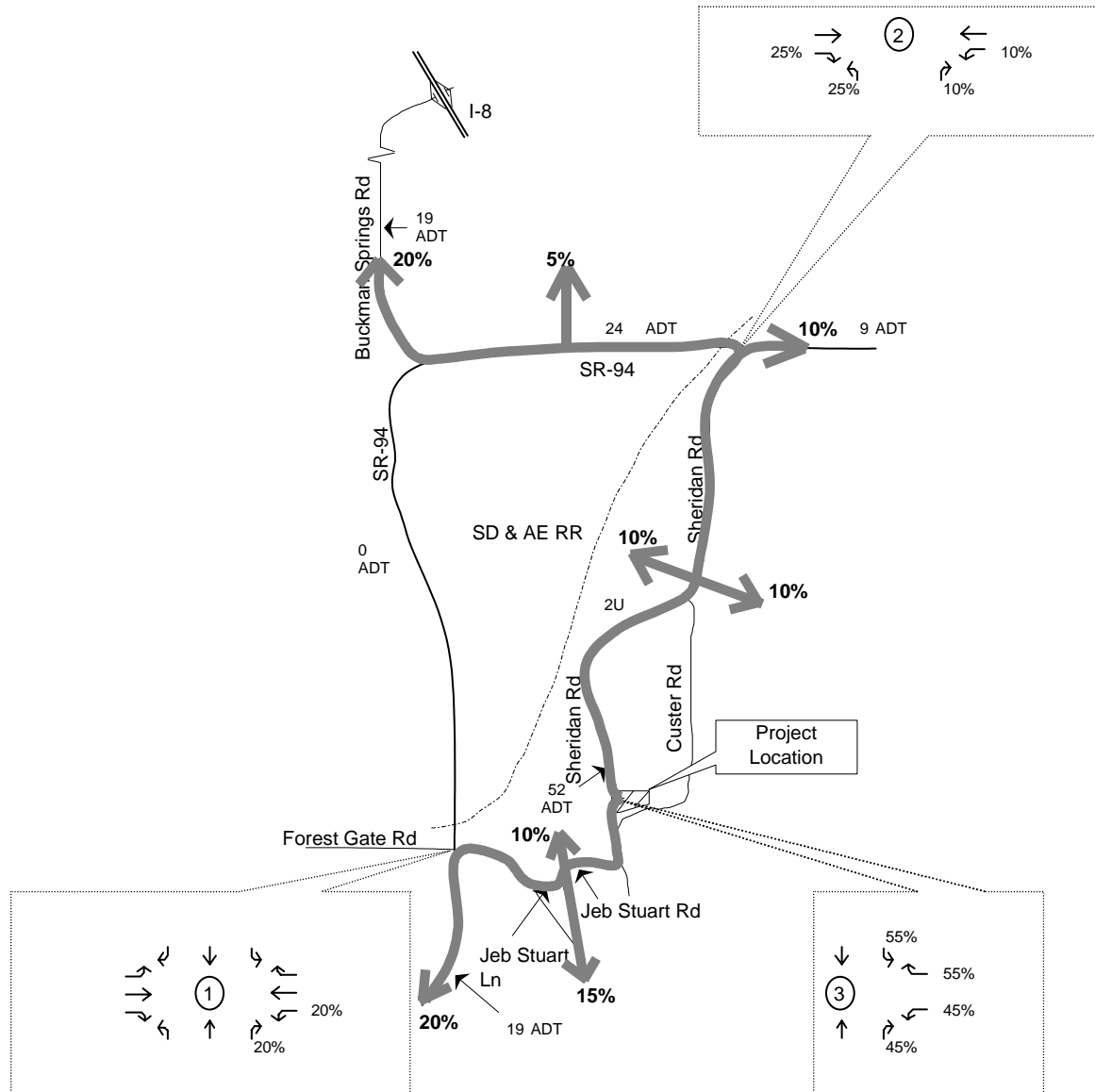


Figure 7: Project Distribution

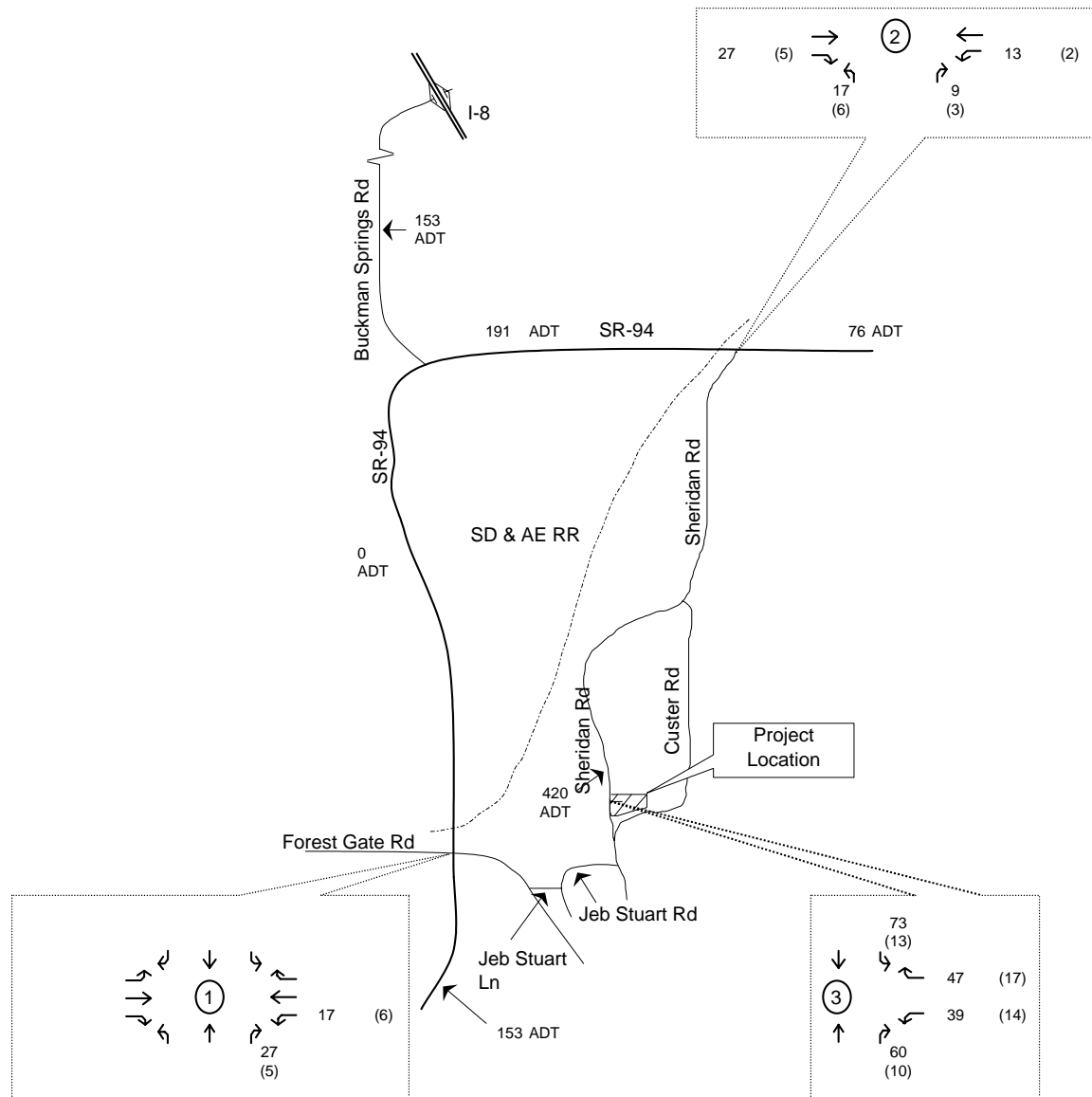


LEGEND

Regional distribution



Figure 8: Project Volumes



LEGEND

- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z,ZZZ ADT volumes shown along segments
- ① Intersection Reference Number to LOS Tables



4.5 Project Access

The single project driveway was reviewed for corner sight distance requirements per County Standards as summarized in **Table 10**.

TABLE 10: CORNER SIGHT DISTANCE

Driveway Location	Observed Direction When Leaving	85 th Percentile Speed (MPH) ¹	County Minimum Corner Sight Distance ¹	County Minimum Corner Sight Observed?
Project Driveway on Sheridan Road	Looking North	39.6	396 Feet	Yes
	Looking South	41.8	418 Feet	Yes

Source: ¹County of San Diego Department of Public Works *Public Road Standards* July 14, 1999.

As shown in Table 10, the required corner sight distance was observed.

The location of the proposed project driveway meets the County's driveway spacing requirements of being located at least 200 feet (centerline to centerline) for another driveway.

Sheridan Road along the project frontage has recently been improved. The applicant does not propose to change Sheridan Road. The project driveway will be constructed per County standards. The project applicant agrees to obtain appropriate construction and encroachment permits for any work along the project frontage within the County's right-of-way.



5.0 Existing + Project Conditions

This scenario accounts for the addition of project traffic onto the existing background traffic for AM, PM and ADT conditions. The peak hour intersection volumes and daily traffic volumes for this scenario of existing + project are shown in **Figure 9**.

The LOS calculated for the intersections, street segments, and highway segments under existing plus project conditions are shown in **Tables 11, 12 and 13**, respectively.

TABLE 11: EXISTING + PROJECT INTERSECTION LEVEL OF SERVICE

Intersection and Control ¹	Movement	Peak Hour	Existing		Existing + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) SR-94 at Forest Gate Rd (U)	EB	AM	9.7	A	9.8	A	0.1	No
	WB	AM	8.9	A	9.4	A	0.5	No
	NB	AM	0.3	A	0.3	A	0.0	No
	SB	AM	4.3	A	4.4	A	0.1	No
	EB	PM	10.2	B	10.2	B	0.0	No
	WB	PM	9.3	A	9.4	A	0.1	No
	NB	PM	0.7	A	0.8	A	0.1	No
	SB	PM	3.3	A	3.3	A	0.0	No
2) SR-94 at Sheridan Rd (U)	EB	AM	0.0	A	0.0	A	0.0	No
	WB	AM	2.1	A	3.1	A	1.0	No
	NB	AM	9.1	A	9.5	A	0.4	No
	EB	PM	0.0	A	0.0	A	0.0	No
	WB	PM	1.3	A	1.5	A	0.2	No
	NB	PM	9.2	A	9.3	A	0.1	No
3) Sheridan Road at Project Driveway (U)	WB LR	AM	DNE	DNE	9.7	A	NA	No
	SB LT	AM	DNE	DNE	6.0	A	NA	No
	WB LR	PM	DNE	DNE	8.7	A	NA	No
	SB LT	PM	DNE	DNE	2.8	A	NA	No

Notes: 1) Intersection Control - S: Signalized; U: Unsignalized. 2) Delay is HCM delay measured in seconds.

3) LOS: Level of Service/ILV Capacity. 4) Delta is the increase in delay from project. 5) Impact due to project (yes or no).

Movement: WB LR - Westbound combination left right turn lane; DNE - Does not exist.

TABLE 12: EXISTING + PROJECT SEGMENT ADT VOLUMES AND LEVEL OF SERVICE (COUNTY CRITERIA)

Street Segment	SR-94	SR-94	SR-94	SR-94	Buckman Spr	Sheridan Rd
From	Tecate Rd	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	I-8	SR-94
To	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	White Star	SR-94	Jeb Stuart Rd
Roadway Classification	Major	Major	Major	Major	Collector	Non-Collector
Bike Lanes Classification	Yes	Yes	Yes	Yes	Yes	No
# of Lanes Currently Built	2	2	2	2	2	2
LOS E Capacity	16,200	16,200	16,200	16,200	16,200	4,500
Existing						
ADT	2,500	2,500	2,200	2,200	2,616	447
Volume to Capacity	0.15	0.15	0.14	0.14	0.16	0.10
Level of Service	B	B	B	B	B	C
Project ADT						
	153	0	191	76	153	420
Existing+Project						
ADT	2,653	2,500	2,391	2,276	2,769	867
Volume to Capacity	0.16	0.15	0.15	0.14	0.17	0.19
Level of Service	B	B	B	B	B	C
Project Increase in V/C	0.01	0.00	0.01	0.00	0.01	0.03
Direct Project Impact?	No	No	No	No	No	No

Source: LOS Engineering, Inc.

Figure 9: Existing + Project Volumes

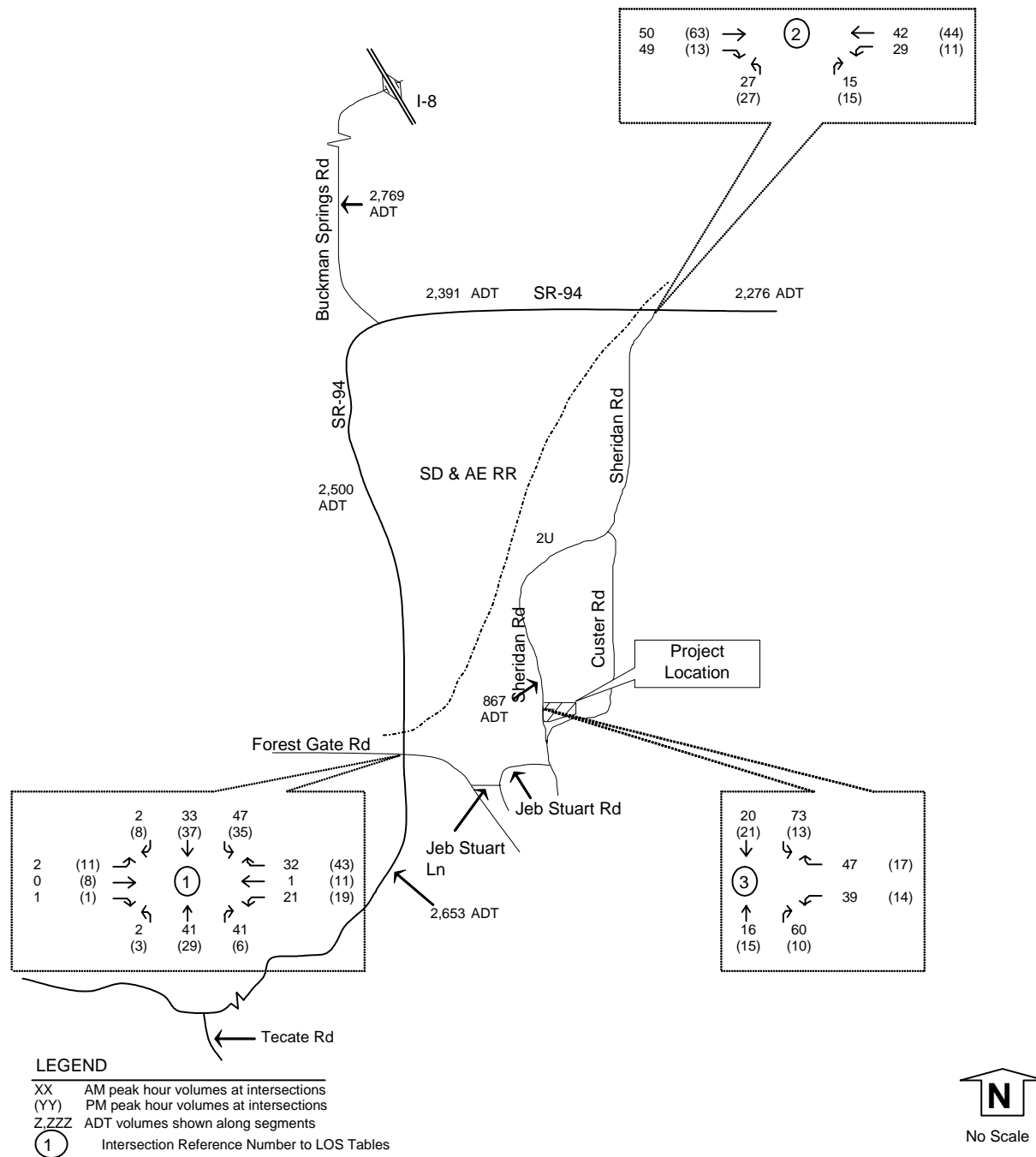


TABLE 13: EXISTING + PROJECT TWO-LANE HIGHWAY LEVEL OF SERVICE (CALTRANS CRITERIA)

Street Segment	SR-94		SR-94		SR-94		SR-94	
From	Tecate Rd		Forest Gate Rd		Buckman Springs Rd		Sheridan Rd	
To	Forest Gate Rd		Buckman Springs Rd		Sheridan Rd		White Star	
Peak Period	AM	PM	AM	PM	AM	PM	AM	PM
Existing								
ADT	2,500		2,500		2,200		2,200	
Peak Hour Volume	138	171	138	171	143	133	143	133
% Time Spent Following	42.7%	46.0%	34.8%	37.3%	33.1%	32.2%	33.1%	32.2%
Volume to Capacity Ratio	0.08	0.1	0.05	0.07	0.06	0.05	0.06	0.05
Level of Service	C	C	B	B	B	B	B	B
Project Pk Hr Volume	44	11	0	0	44	11	22	5
Existing+Project								
Peak Hour Volume	182	182	138	171	187	144	165	138
% Time Spent Following	47.5%	47.1%	34.8%	37.3%	36.7%	33.1%	34.9%	32.6%
Volume to Capacity Ratio	0.08	0.10	0.05	0.07	0.06	0.05	0.06	0.05
Increase in V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Level of Service	C	C	B	B	B	B	B	B
Project Impact?	No	No	No	No	No	No	No	No

Notes: HCM Calculations included in the Appendix.

Under existing plus project conditions, all study intersections and roadways were calculated to operate at LOS C or better. No project impacts were calculated. Existing + project intersections calculations are included in **Appendix H** with HCM two-lane highway calculations included in **Appendix I**.



6.0 Cumulative Projects

Based on a review of San Diego County records, eight (8) cumulative projects were identified, which are anticipated to generate traffic and use identical roadways as the project. A summary of the cumulative projects is included below with their respective and cumulative traffic generation shown in **Table 14**.

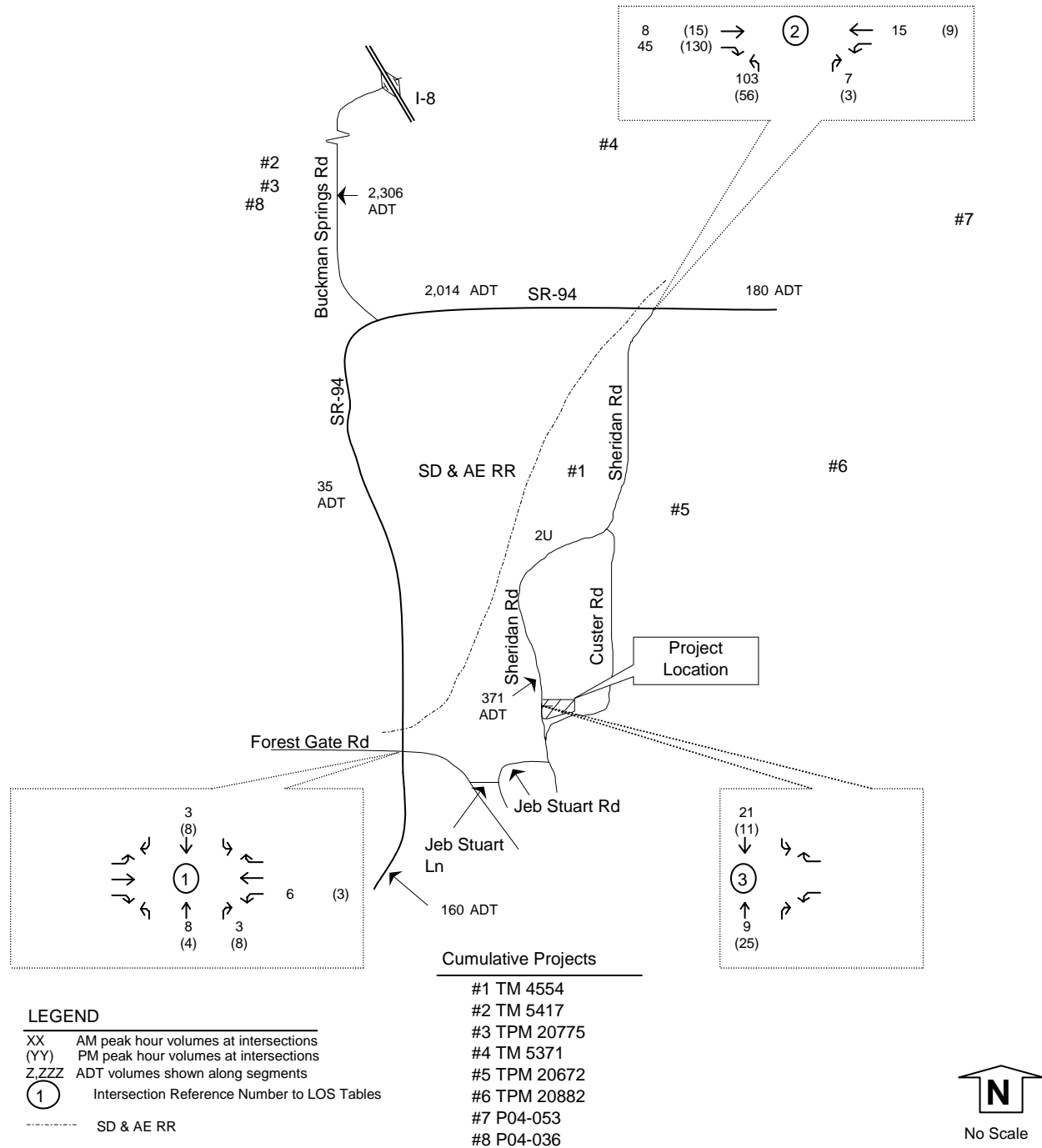
- 1) *TM 4554* – A residential project of approximately 221 dwelling units southeast of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 2,210 ADT with 177 AM and 221 PM peak hour trips.
- 2) *TM 5417* – A residential project of 13 dwelling units northwest of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 156 ADT with 13 AM and 18 PM peak hour trips.
- 3) *TPM 20775* – A residential project of 2 dwelling units northwest of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 24 ADT with 2 AM and 3 PM peak hour trips.
- 4) *TM 5371* – A residential project of 9 dwelling units northeast of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 108 ADT with 9 AM and 11 PM peak hour trips.
- 5) *TPM 20672* – A residential project of 4 dwelling units southwest of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 48 ADT with 4 AM and 4 PM peak hour trips.
- 6) *TPM 20882* – A residential project of 4 dwelling units northwest of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 48 ADT with 4 AM and 4 PM peak hour trips.
- 7) *P04-053* – A truck haul operation northeast of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is calculated at 20 ADT with 3 AM and 3 PM peak hour trips.
- 8) *P04-036* – A group care facility and camp northwest of SR-94/Buchman Springs Road. The traffic generation for this cumulative project is estimated at 300 ADT with 110 AM and 120 PM peak hour trips.

TABLE 14: CUMULATIVE PROJECT TRAFFIC GENERATION

Cumulative Projects	ADT	AM		PM	
		IN	OUT	IN	OUT
1) TM 4554 Campo Hills	2,210	53	124	155	66
2) TM 5417	156	4	9	13	5
3) TPM 20775	24	1	1	2	1
4) TM 5371	108	3	6	8	3
5) TPM 20672	48	1	3	3	1
6) TPM 20882	48	1	3	3	1
7) P04-053	20	2	1	1	2
8) P04-036	300	78	33	36	84
Total	2,914	143	180	221	163

The individual and group cumulative project locations and volumes are shown on **Figure 10** with support data included in **Appendix J**.

Figure 10: Cumulative Project Locations and Volumes



7.0 Existing + Project + Cumulative Conditions

This scenario accounts for the addition of cumulative project traffic onto the existing plus project traffic for AM, PM and ADT conditions. The peak hour intersection volumes and daily traffic volumes for this scenario of existing plus project plus cumulative are shown in **Figure 11**.

The LOS calculated for the intersections, street segments, and highway segments under existing plus project plus cumulative conditions are shown in **Tables 15, 16, and 17**, respectively.

TABLE 15: EXISTING + PROJECT + CUMULATIVE INTERSECTION LEVEL OF SERVICE

Intersection and Control ¹	Movement	Peak Hour	Existing		Existing + Project				Ex + Proj + Cumulative	
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵	Delay ²	LOS ³
1) SR-94 at Forest Gate Rd (U)	EB	AM	9.7	A	9.8	A	0.1	No	10.2	B
	WB	AM	8.9	A	9.4	A	0.5	No	9.9	A
	NB	AM	0.3	A	0.3	A	0.0	No	0.3	A
	SB	AM	4.3	A	4.4	A	0.1	No	5.0	A
	EB	PM	10.2	B	10.2	B	0.0	No	10.8	B
	WB	PM	9.3	A	9.4	A	0.1	No	9.7	A
	NB	PM	0.7	A	0.8	A	0.1	No	0.8	A
	SB	PM	3.3	A	3.3	A	0.0	No	3.8	A
2) SR-94 at Sheridan Rd (U)	EB	AM	0.0	A	0.0	A	0.0	No	0.0	A
	WB	AM	2.1	A	3.1	A	1.0	No	3.4	A
	NB	AM	9.1	A	9.5	A	0.4	No	11.3	B
	EB	PM	0.0	A	0.0	A	0.0	No	0.0	A
	WB	PM	1.3	A	1.5	A	0.2	No	1.9	A
	NB	PM	9.2	A	9.3	A	0.1	No	10.6	B
3) Sheridan Road at Project Driveway (U)	WB LR	AM	DNE	DNE	9.7	A	NA	No	10.7	B
	SB LT	AM	DNE	DNE	6.0	A	NA	No	6.2	A
	WB LR	PM	DNE	DNE	8.7	A	NA	No	9.0	A
	SB LT	PM	DNE	DNE	2.8	A	NA	No	2.8	A

Notes: 1) Intersection Control - S: Signalized; U: Unsignalized. 2) Delay is HCM delay measured in seconds.

3) LOS: Level of Service/ILV Capacity. 4) Delta is the increase in delay from project. 5) Impact due to project (yes or no).

Movement: WB LR - Westbound combination left right turn lane; DNE - Does not exist.

Figure 11: Existing + Project + Cumulative Volumes

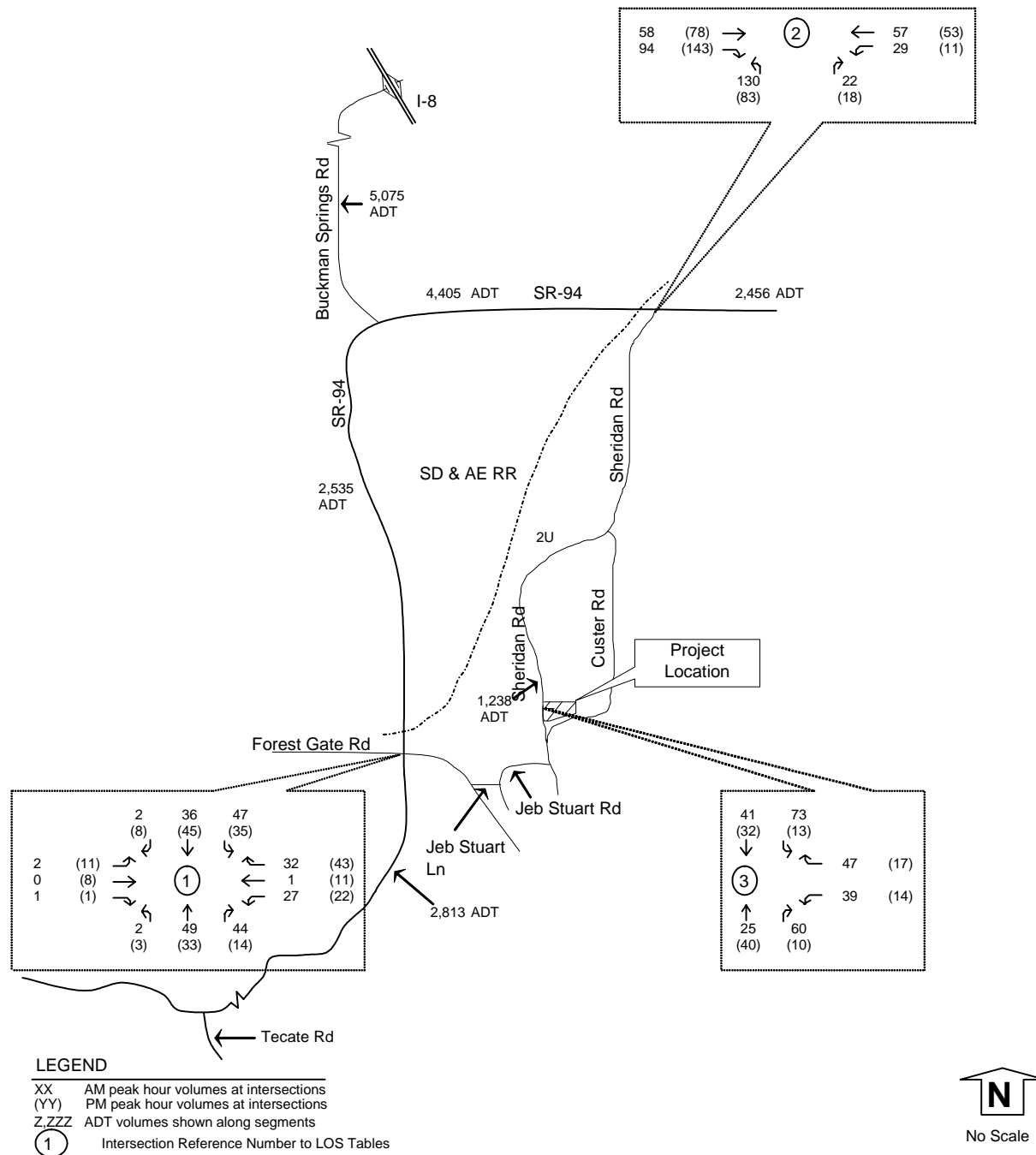


TABLE 16: EXISTING + PROJECT + CUMULATIVE SEGMENT ADT VOLUMES AND LOS (COUNTY CRITERIA)

Street Segment	SR-94	SR-94	SR-94	SR-94	Buckman Spr	Sheridan Rd
From	Tecate Rd	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	I-8	SR-94
To	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	White Star	SR-94	Jeb Stuart Rd
Roadway Classification	Major	Major	Major	Major	Collector	Non-Collector
Bike Lanes Classification	Yes	Yes	Yes	Yes	Yes	No
# of Lanes Currently Built	2	2	2	2	2	2
LOS E Capacity	16,200	16,200	16,200	16,200	16,200	4,500
Existing+Cumulative						
ADT	2,660	2,535	4,214	2,380	4,922	818
Volume to Capacity	0.16	0.16	0.26	0.15	0.30	0.18
Level of Service	B	B	C	B	C	C
Project ADT	153	0	191	76	153	420
Existing+Cumulative+Project						
ADT	2,813	2,535	4,405	2,456	5,075	1,238
Volume to Capacity	0.17	0.16	0.27	0.15	0.31	0.28
Level of Service	B	B	C	B	C	C
Increase in V/C from E+C	0.01	0.00	0.01	0.00	0.01	0.09
Cumulative Impact?	No	No	No	No	No	No

Source: LOS Engineering, Inc.

TABLE 17: EXISTING + PROJECT + CUMULATIVE TWO-LANE HIGHWAY LOS (CALTRANS CRITERIA)

Street Segment	SR-94		SR-94		SR-94		SR-94	
From	Tecate Rd		Forest Gate Rd		Buckman Springs Rd		Sheridan Rd	
To	Forest Gate Rd		Buckman Springs Rd		Sheridan Rd		White Star	
Peak Period	AM	PM	AM	PM	AM	PM	AM	PM
Existing								
ADT	2,500		2,500		2,200		2,200	
Peak Hour Volume	138	171	138	171	143	133	143	133
% Time Spent Following	42.7%	46.0%	34.8%	37.3%	33.1%	32.2%	33.1%	32.2%
Volume to Capacity Ratio	0.08	0.10	0.05	0.07	0.06	0.05	0.06	0.05
Level of Service	C	C	B	B	B	B	B	B
Project Pk Hr Volume	44	11	0	0	44	11	22	5
Existing+Project								
Peak Hour Volume	182	182	138	171	187	144	165	138
% Time Spent Following	47.5%	47.1%	34.8%	37.3%	36.7%	33.1%	34.9%	32.6%
Volume to Capacity Ratio	0.08	0.10	0.05	0.07	0.06	0.05	0.06	0.05
Increase in V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Level of Service	C	C	B	B	B	B	B	B
Project Impact?	No	No	No	No	No	No	No	No
Cumulative Pk Hr Volume	14	20	11	12	171	210	30	27
Existing+Project + Cumulative								
Peak Hour Volume	196	202	149	183	358	354	195	165
% Time Spent Following	48.4%	48.9%	35.6%	38.1%	49.5%	49.2%	37.4%	34.9%
Volume to Capacity Ratio	0.09	0.12	0.06	0.07	0.12	0.13	0.07	0.06
Increase in V/C Ratio	0.01	0.02	0.01	0.00	0.06	0.08	0.01	0.01
Level of Service	C	C	B	B	C	C	B	B
Cumulative Impact?	No	No	No	No	No	No	No	No

Notes: HCM Calculations included in the Appendix.

Under existing plus project plus cumulative conditions, all study intersections and roadways were calculated to operate at LOS C or better. No cumulative impacts were calculated on the study roadways; however, to mitigate any potential cumulative traffic impacts on other County roadways, the applicant agrees to pay into the TIF program. Existing + project + cumulative intersections calculations are included in **Appendix K** with HCM two-lane highway calculations included in **Appendix L**.

8.0 Year 2020 without and with Project Conditions

Year 2020 conditions were analyzed based on a growth factor applied to existing plus cumulative ADTs instead of SANDAG 2020 ADTs because the SANDAG 2020 ADTs were found to be at or below existing plus cumulative ADTs. The growth factors were calculated from 10 years of Caltrans ADTs for SR-94 in the vicinity of the project.

The year 2020 intersection volumes were factored up from existing turn moves based on the increase in ADT for each intersection approach. SANDAG 2020 ADTs, growth factor calculations, forecasted 2020 ADTs, and forecasted turn moves are included in **Appendix M**.

The peak hour intersection volumes and ADTs for Year 2020 without the project are shown in **Figure 12** and with the project in **Figure 13**. The LOS calculated for the intersections, street segments, and highway segments for Year 2020 without and with the project are shown in **Tables 18, 19, and 20**, respectively.

TABLE 18: YEAR 2020 WITHOUT AND WITH PROJECT INTERSECTION LEVEL OF SERVICE

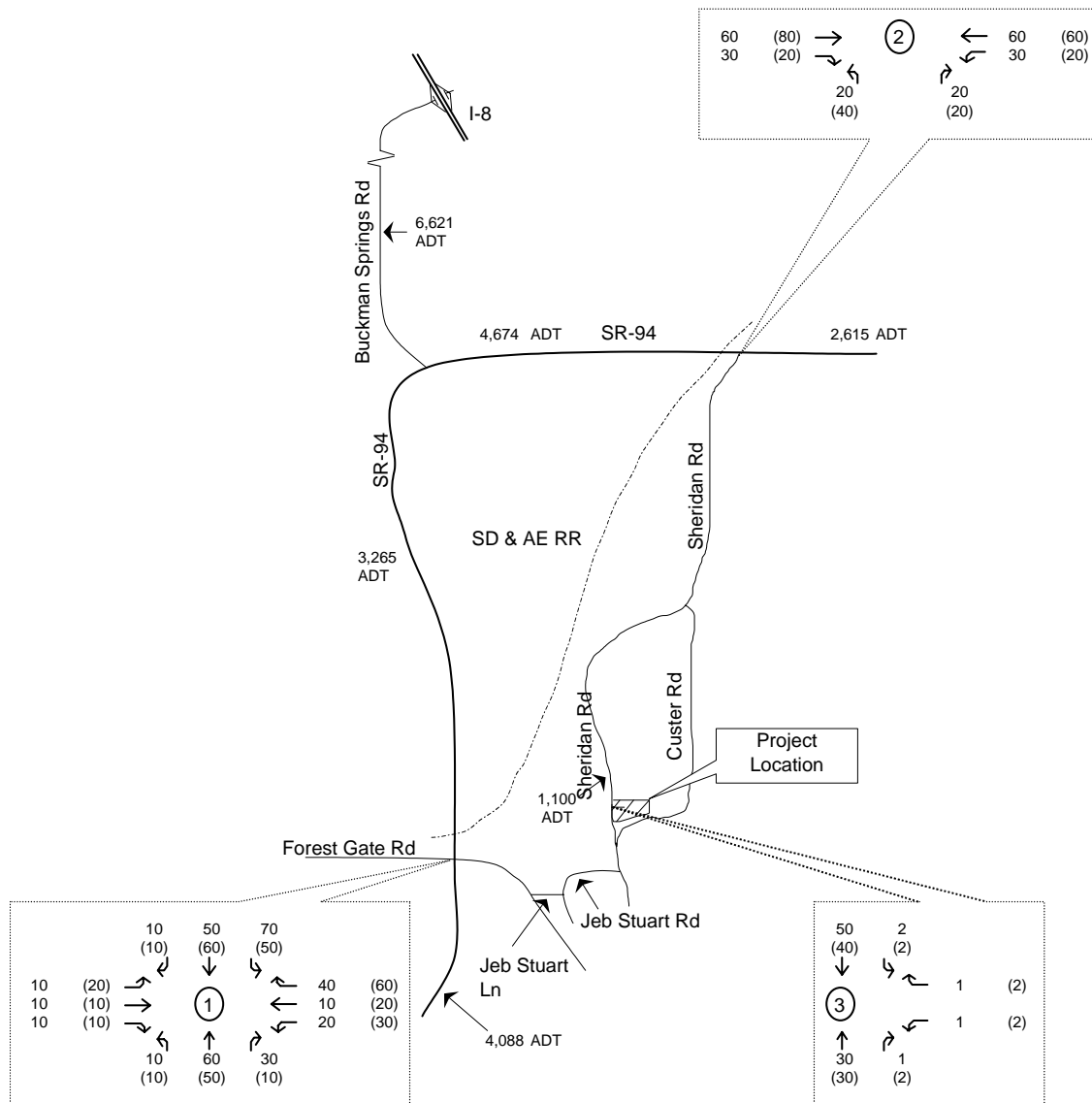
Intersection and Control ¹	Movement	Peak Hour	Year 2020		Year 2020 + Project			
			Delay ²	LOS ³	Delay ²	LOS ³	Delta ⁴	Impact ⁵
1) SR-94 at Forest Gate Rd (U)	EB	AM	10.8	B	11.0	B	0.2	No
	WB	AM	10.2	B	10.9	B	0.7	No
	NB	AM	0.8	A	0.8	A	0.0	No
	SB	AM	4.2	A	4.3	A	0.1	No
	EB	PM	11.0	B	11.0	B	0.0	No
	WB	PM	10.3	B	10.4	B	0.1	No
	NB	PM	1.1	A	1.1	A	0.0	No
	SB	PM	3.2	A	3.3	A	0.1	No
2) SR-94 at Sheridan Rd (U)	EB	AM	0.0	A	0.0	A	0.0	No
	WB	AM	2.6	A	3.3	A	0.7	No
	NB	AM	9.4	A	9.9	A	0.5	No
	EB	PM	0.0	A	0.0	A	0.0	No
	WB	PM	1.9	A	2.1	A	0.2	No
	NB	PM	9.7	A	9.8	A	0.1	No
3) Sheridan Road at Project Driveway (U)	WB LR	AM	8.7	A	9.9	A	1.2	No
	SB LT	AM	0.3	A	4.6	A	4.3	No
	WB LR	PM	8.7	A	8.9	A	0.2	No
	SB LT	PM	0.4	A	1.8	A	1.4	No

Notes: 1) Intersection Control - S: Signalized; U: Unsignalized. 2) Delay is HCM delay measured in seconds.

3) LOS: Level of Service/ILV Capacity. 4) Delta is the increase in delay from project. 5) Impact due to project (yes or no).

Movement: WB LR - Westbound combination left right turn lane; DNE - Does not exist.

Figure 12: Year 2020 Volumes

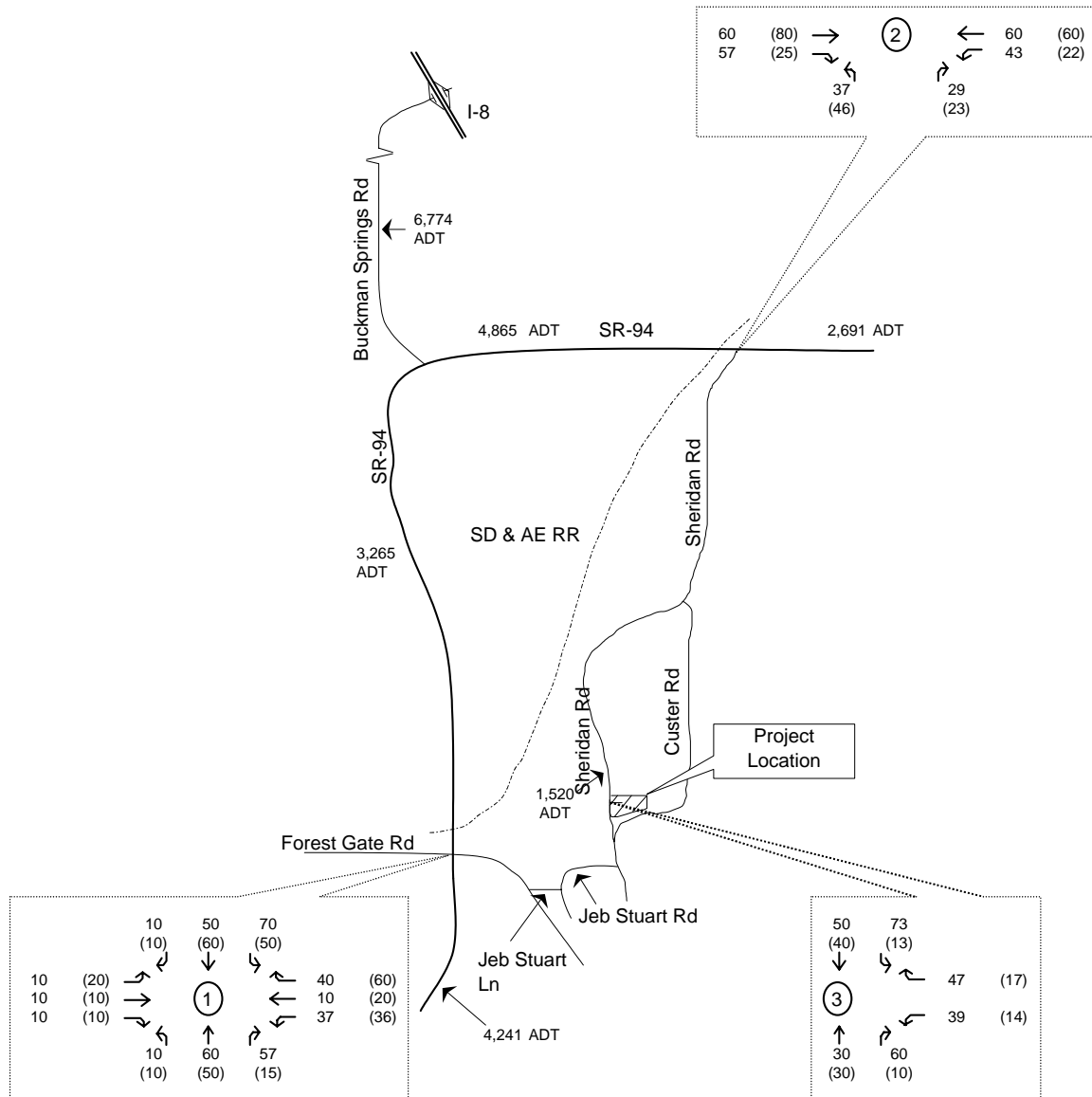


LEGEND

- XX AM peak hour volumes at intersections
- (YY) PM peak hour volumes at intersections
- Z,ZZZ ADT volumes shown along segments
- ① Intersection Reference Number to LOS Tables



Figure 13: Year 2020 + Project Volumes



LEGEND

XX AM peak hour volumes at intersections
 (YY) PM peak hour volumes at intersections
 Z,ZZZ ADT volumes shown along segments
 ① Intersection Reference Number to LOS Tables

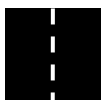


TABLE 19: YEAR 2020 + PROJECT SEGMENT ADT VOLUMES AND LOS (COUNTY CRITERIA)

Street Segment	SR-94	SR-94	SR-94	SR-94	Buckman Springs Rd	Sheridan Rd
From	Tecate Rd	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	I-8	SR-94
To	Forest Gate Rd	Buckman Spr Rd	Sheridan Rd	White Star	SR-94	Jeb Stuart Rd
Roadway Classification	Major	Major	Major	Major	Collector	Non-Collector
Bike Lanes Classification	Yes	Yes	Yes	Yes	Yes	No
# of Lanes Currently Built	2	2	2	2	2	2
LOS E Capacity	16,200	16,200	16,200	16,200	16,200	4,500
Year 2020						
ADT	4,088	3,265	4,674	2,615	6,621	1,100
Volume to Capacity	0.25	0.20	0.29	0.16	0.41	0.24
Level of Service	B	B	C	B	C	C
Project ADT	153	0	191	76	153	420
Year 2020 + Project						
ADT	4,241	3,265	4,865	2,691	6,774	1,520
Volume to Capacity	0.26	0.20	0.30	0.17	0.42	0.34
Level of Service	C	B	C	B	C	C
Project Increase in V/C	0.01	0.01	0.01	0.01	0.01	0.03
Direct Project Impact?	No	No	No	No	No	No

Source: LOS Engineering, Inc.

TABLE 20: YEAR 2020 + PROJECT TWO-LANE HIGHWAY LOS (CALTRANS CRITERIA)

Street Segment	SR-94		SR-94		SR-94		SR-94	
From	Tecate Rd		Forest Gate Rd		Buckman Springs Rd		Sheridan Rd	
To	Forest Gate Rd		Buckman Springs Rd		Sheridan Rd		White Star	
Peak Period	AM	PM	AM	PM	AM	PM	AM	PM
Year 2020								
ADT	4,088		3,265		4,674		2,615	
Peak Hour Volume (1)	226	280	181	223	335	363	175	160
% Time Spent Following	51.0%	55.5%	38.0%	41.0%	48.0%	49.7%	35.8%	34.5%
Volume to Capacity Ratio	0.14	0.17	0.07	0.09	0.13	0.14	0.07	0.06
Level of Service	C	C	B	B	C	C	B	B
Project Pk Hr Volume	44	11	0	0	44	11	22	5
Year 2020 + Project								
Peak Hour Volume	270	291	181	223	379	374	197	165
% Time Spent Following	54.7%	56.4%	38.0%	41.0%	50.7%	50.4%	37.5%	34.9%
Volume to Capacity Ratio	0.16	0.18	0.07	0.09	0.15	0.15	0.08	0.06
Increase in V/C Ratio	0.02	0.01	0.00	0.00	0.02	0.01	0.01	0.00
Level of Service	C	C	B	B	C	C	B	B
Project Impact?	No	No	No	No	No	No	No	No

Notes: HCM Calculations included in the Appendix. (1) Peak hr vol = ADT x KD factor included in Appendix.

Under Year 2020 without and with project conditions, all study intersections and roadways were calculated to operate at LOS C or better. No impacts were calculated. Year 2020 without and with project intersections calculations are included in **Appendix N** with HCM two-lane highway calculations included in **Appendix O**.



9.0 Conclusion

The proposed Saint Adelaide Catholic Church is to be located on the northeast corner of Custer Road and Sheridan Road in the Campo Valley area of San Diego County, California. The site is currently vacant. The applicant has indicated that no existing or approved use permits exist. The proposed use permit will be for a Church. A single project driveway is proposed, which meets the County required corner sight distance requirements.

The project is proposed in three phases: Phase 1 around year 2007 with a Multi Purpose Hall of 5,656 SF; Phase 2 around year 2012 with the addition of a Sanctuary of 4,809 SF; and Phase 3 around year 2020 with the addition of a School of 12,159 SF (maximum of 270 students).

A worst case scenario was assumed where all three phases could be completed under existing conditions even though the Sanctuary is not planned for completion until 2012 and the School is not planned for completion until 2020. The project traffic generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002 (for Church weekday activities), and from the Institute of Transportation Engineers (ITE) *7th Edition Trip Generation*, 2004 (for the School weekday attendance). The combined SANDAG and ITE traffic generation rates were used to calculate the total project at 764 ADT, 219 AM peak hour trips (130 inbound and 84 outbound), and 54 PM peak hour trips (23 inbound and 31 outbound).

Five (5) scenarios were analyzed, which included Existing, Existing + Project, Existing + Project + Cumulative, Year 2020, and Year 2020 + Project Conditions. Operational findings by scenario are summarized below:

- 1) Under existing conditions, all study intersections and roadways were calculated to operate at LOS C or better.
- 2) Under existing plus project conditions, all study intersections and roadways were calculated to operate at LOS C or better. No project impacts were calculated.
- 3) Under existing plus project plus cumulative conditions, all study intersections and roadways were calculated to operate at LOS C or better. No cumulative impacts were calculated on the study roadways; however, to mitigate any potential cumulative traffic impacts on other County roadways, the applicant agrees to pay into the TIF program.
- 4) Under year 2020 conditions, all study intersections and roadways were calculated to operate at LOS C or better.
- 5) Under year 2020 plus project conditions, all study intersections and roadways were calculated to operate at LOS C or better. No impacts were calculated.



9.1 Project TIF Participation and Recommendations

To mitigate any potential cumulative traffic impacts to below a level of significance, the project applicant agrees to pay into the TIF program. A copy of a letter from the applicant agreeing to the TIF program is included in **Appendix P**. The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portion of San Diego County. This program includes the adoption of a TIF program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected build-out (year 2030) development conditions on the existing circulation element roadway network throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement project funded by other public funding sources, such as TransNet, gas tax, and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway buildout over the next 30 years, will use funds from TransNET, state, and federal funding to improve freeways to projected level of service objectives in the RTP.

The proposed project generates 764 ADT at the final project phase. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips therefore contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project was included in the growth projections upon which the TIF project is based. Therefore, payment of the TIF, which will be required at issuance of building permits, in combination with other components of the program describe above, will mitigate potential cumulative impacts to less than significant.

Any work along the project frontage within the County's right-of-way will require construction and encroachment permits.